Claims

1. (New) A method comprising:

storing package identification data identifying at least one package containing one or more products, in association with object identification data identifying an object related to the product.

2. (New) A method as claimed in claim 1 wherein the object is the product.

3. (New) A method as claimed in claim 1 wherein the object is the package.

4. (New) A method as claimed in claim 1 wherein the object is a group of packages.

5. (New) A method as claimed in claim 1 wherein the object is a parent containing at least one child object identified by respective object identification data.

6. (New) A method as claimed in claim 1 further comprising:

storing event data indicating status of an event related to the package, in association with the package identification data.

7. (New) A method as claimed in claim 6 wherein the event data comprises description data describing the event associated with the event data

8. (New) A method as claimed in claim 7 wherein the description of the event comprises at least one of "package pick up," "package received at pickup distribution hub," "package exited pickup distribution hub," "package on long-haul transport," "package off long-haul transport," "package arrived at receive distribution hub," "package exited receive distribution hub," and "package delivered."

9. (New) A method as claimed in claim 8 wherein the event data comprises location data indicating a location at which the event occurred.

10. (New) A method as claimed in claim 9 wherein the location includes at least one of a drop location, carrier store, service center, pickup vehicle, sender's location, package intake of send distribution hub, package outlet of send distribution hub, package inlet to long-haul transport, package outlet to long-haul transport, package intake of receive distribution hub, package outlet of receive distribution hub, and receiver's location.

11. (New) A method as claimed in claim 6 wherein the event data comprises data indicating the date and time on which the event occurred.

12. (New) A method as claimed in claim 6 further comprising:

tagging at least one of the package identification data, object identification data, and event data.

40

13. (New) A method as claimed in claim 1 further comprising:

tagging at least one of the package identification data and object identification data.

14. (New) A method as claimed in claim 1 further comprising:

receiving the object identification data.

15. (New) A method as claimed in claim 1 further comprising:

generating the package identification data.

16. (New) A method as claimed in claim 1 further comprising:

receiving the event data.

41

17. (New) A method comprising:

receiving object identification data identifying an object directly or indirectly associated with a product;

obtaining package identification data identifying a package in which the product is shipped;

linking object identification data to package identification data;

generating shipping label including package identification data;

providing shipping label to a sender of the package;

transporting package with product and having shipping label from the sender to a receiver;

receiving event data generated at one or more portals as the package is transported from sender to receiver; and

storing event data in correspondence with the linked object identification data and package identification data.

18. (New) A method as claimed in claim 17 wherein the object is the product.

19. (New) A method as claimed in claim 17 wherein the object is the package.

20. (New) A method as claimed in claim 17 wherein the object is a group of packages.

21. (New) A method as claimed in claim 17 wherein the object is a parent that comprises at least one child object identified by respective object identification data.

22. (New) A method as claimed in claim 17 wherein the object identification data is received from the computer system of the sender of the package.

23. (New) A method as claimed in claim 17 wherein the received object identification data is generated by a scanner of one of the portals.

24. (New) A method as claimed in claim 17 wherein the package identification data is obtained by receiving the package identification data from the computer system of the sender of the package.

25. (New) A method as claimed in claim 17 wherein the package identification data is obtained by generating the package identification data.

26. (New) A method as claimed in claim 17 further comprising:

   tagging at least one of the object identification data, package identification data, and event data.

27. (New) A method as claimed in claim 17 further comprising:

   transmitting object identification data, package identification data, and event data to an object naming service (ONS) computer system.

28. (New) A method as claimed in claim 17 further comprising:

transmitting object identification data to an object naming service (ONS) computer system;

receiving a network address corresponding to the object identification data from the ONS computer system; and

transmitting the object identification data, package identification data, and event data to a physical mark-up language (PML) computer system using the received network address.

29. (New) A method comprising:

receiving object identification data from a requesting computer system;

retrieving a network address for a physical mark-up language (PML) computer system based on the object identification data; and

transmitting the network address to the requesting computer system.

30. (New) A method comprising:

receiving object identification data, package identification data, and event data at an object naming service (ONS) computer system;

retrieving a network address for the PML computer system using object identification data; and

transmitting object identification data, package identification data, and event data to the PML computer system using the network address.

31. (New) A method comprising:

receiving object identification data, package identification data, and event data and corresponding tags; and

storing the object identification data, package identification data, and event data in a data storage unit in association with the tags.

32. (New) A method comprising:

receiving a request from a computer system to access data with object identification data and tags;

retrieving data from a data storage unit based on the object identification data and tags; and

transmitting the retrieved data to the computer system generating the request.

33. (New) A system for transporting a package from a sender to a receiver by a carrier, the system comprising:

at least one portal having a respective scanner, the scanner obtaining package identification data identifying the package by scanning the package as it passes through the portal;

a computer connected to receive the package identification data from the portal and generating event data in response to the receipt of the package identification data, the event data indicating status of the package in route from sender to receiver; and

a data storage unit connected to the computer and having a database with object identification data identifying an object related to a product shipped in the package, the object identification data stored in association with the package identification data, the database storing the event data in association with the package identification data.

34. (New) A system as claimed in claim 33 wherein the object is the product.

35. (New) A system as claimed in claim 33 wherein the object is the package.

36. (New) A system as claimed in claim 33 wherein the object is a group of packages.

37. (New) A system as claimed in claim 33 wherein the object is a parent that contains at least one child object having respective object identification data.

38. (New) A system as claimed in claim 33 wherein the object identification data and associated package identification data are provided to the computer by a computer system of a sender, and the computer stores the object identification data in association with the package identification data in the database of the data storage unit.

39. (New) A system as claimed in claim 33 wherein the object identification data and associated package identification data are provided by the scanner of the first portal to encounter the package as the carrier transports the package from sender to receiver.

40. (New) A system as claimed in claim 33 wherein the scanner comprises an optical scanner that scans the package identification data from a shipping label attached to the package.

41. (New) A system as claimed in claim 40 wherein the package identification data is in the form of a barcode scanned by the optical scanner.

42. (New) A system as claimed in claim 41 wherein the scanner comprises an electro-magnetic scanner scanning at least the object identification data from the product inside of the package.

43. (New) A system as claimed in claim 42 wherein the object identification data is encoded in a radio frequency identification (RFID) tag scanned by the electromagnetic scanner.

44. (New) A system as claimed in claim 33 wherein the portal is associated with an event related to the status of the package in route from the sender to the receiver within the transport and storage network of the carrier.

45. (New) A system as claimed in claim 33 wherein the portal is located at one of a drop location, carrier store, service center, pickup vehicle, sender's location, package intake of send distribution hub, package outlet of send distribution hub, package inlet to long-haul transport, package outlet to long-haul transport, package intake of receive distribution hub, package outlet of receive distribution hub, and receiver's location.

46. (New) A system as claimed in claim 33 wherein the computer generates the event data based on the identity of at least one of the scanner and portal reporting the package identification data to the computer.

47. (New) A system as claimed in claim 46 wherein the data storage unit stores data identifying at least one of the portal and scanner in association with corresponding event data, and the computer uses the data identifying at least one of the portal and scanner received with the package identification data to identify the corresponding event data for storage in the data storage unit in association with the package identification data.

48. (New) A system as claimed in claim 46 wherein the data storage unit stores description data associated with the event, and the computer generates the description data as

part of the event data describing the event by using the identity of at least one of the scanner and portal reporting the package identification data to the computer.

49. (New) A system as claimed in claim 48 wherein the description data comprises characters describing the event as at least one of "package pick up," "package received at pickup distribution hub," "package exited pickup distribution hub," "package on long-haul transport," "package off long-haul transport," "package arrived at receive distribution hub," "package exited receive distribution hub," and "package delivered."

50. (New) A system as claimed in claim 46 wherein the event data comprises location data indicating a location at which the event occurred.

51. (New) A system as claimed in claim 50 wherein the computer determines the location at which the event occurred based on data identifying at least one of the scanner and portal received by the computer along with the package identification data.

52. (New) A system as claimed in claim 50 wherein the scanner generates location data indicating a location at which the event corresponding to the event data occurred, the location data included with the package identification data reported by the scanner.

53. (New) A method as claimed in claim 52 wherein the location includes at least one of a drop location, carrier store, service center, pickup vehicle, sender's location, package intake of send distribution hub, package outlet of send distribution hub, package inlet to long-haul

transport, package outlet to long-haul transport, package intake of receive distribution hub, package outlet of receive distribution hub, and receiver's location.

54. (New) A method as claimed in claim 33 wherein the event data comprises data indicating the date and time at which the event occurred.

55. (New) A system as claimed in claim 54 wherein the computer timestamps the received package identification data from the scanner with date and time data, and stores same in association with the package identification data in the data storage unit.

56. (New) A system as claimed in claim 54 wherein the scanner timestamps the package identification data and transmits same to the computer for storage in the data storage unit as event data associated with the package identification data.

57. (New) A system as claimed in claim 33 wherein the computer tags at least one of the object identification data, package identification data, and event data to permit such data to be read and interpreted by an external computer system.

58. (New) A system as claimed in claim 57 wherein computer is connected to an object naming service (ONS) computer system to which the computer uploads the product identification data, package identification data, and event data along with corresponding tags.

59. (New) A system as claimed in claim 57 wherein the data storage unit stores a network address of an object naming service (ONS) computer system, and the computer is connected via a communications network and uses the network address to upload object identification data to the ONS computer system, the computer receiving from the ONS computer system a network address of a physical mark-up language (PML) computer system based on the object identification data, the computer uploading tagged object identification data to the PML computer system for storage and access by another computer system of an entity involved with the product.

51

60. (New) In a computer system receiving from a requesting computer system object identification data identifying an object related to a product that is shipped in a package from a sender to a receiver by a carrier via a communications network, the computer system comprising:

a computer connected to the communications network; and

a data storage unit connected to the computer, and storing a network address of a physical mark-up language (PML) computer system for storing and providing access to event data indicating events related to the object as it is shipped by the carrier from the sender to the receiver, the computer receiving a request for the network address and providing same to the requesting computer system.

61. (New) In a computer system receiving via a communications network from a requesting computer system a request to access object identification data related to a product, package identification data identifying a package containing the product, and event data related to events related to the object as it transits from a sender to a receiver through the transport and storage network of a carrier, the computer system comprising:

a data storage unit storing the object identification data, package identification data, and event data in association with one another; and

a computer connected to the communications network to receive the request to access the object identification data, package identification data, and event data, the computer determining whether the requesting computer is authorized to access the object identification data, package identification data, and event data, and retrieving providing such data to the requesting computer system if the requestor is authorized to access such data.

52

62. (New) A computer-readable medium storing a computer program that can be executed by a computer to store package identification data identifying at least one package in association with object identification data identifying at least one object associated with at least one product contained by the package.

63. (New) A computer-readable medium as claimed in claim 62 wherein the object is the product.

64. (New) A computer-readable medium as claimed in claim 62 wherein the object is the package.

65. (New) A computer-readable medium as claimed in claim 62 wherein the object is a group of packages.

66. (New) A computer-readable medium as claimed in claim 62 wherein the object is a parent that comprises at least one child object having respective object identification data.

67. (New) A computer-readable medium as claimed in claim 62 wherein the computer program can further be executed to store event data indicating an event related to the package as it is shipped and stored in a carrier network from a sender to a receiver, in association with the package identification data.

68. (New) A computer-readable medium as claimed in claim 67 wherein the event data comprises description data describing the event associated with the event data.

69. (New) A computer-readable medium as claimed in claim 68 wherein the description data identifying the event comprises characters indicating at least one of "package pick up," "package received at pickup distribution hub," "package exited pickup distribution hub," "package on long-haul transport," "package off long-haul transport," "package arrived at receive distribution hub," "package exited receive distribution hub," and "package delivered."

70. (New) A computer-readable medium as claimed in claim 67 wherein the event data comprises location data indicating a location at which the event occurred.

71. (New) A computer-readable medium as claimed in claim 70 wherein the location data identifies at least one of a drop location, carrier store, service center, pickup vehicle, sender's location, package intake of send distribution hub, package outlet of send distribution hub, package inlet to long-haul transport, package outlet to long-haul transport, package intake of receive distribution hub, package outlet of receive distribution hub, and receiver's location.

72. (New) A computer-readable medium as claimed in claim 62 wherein the event data comprises data indicating the date and time on which the event occurred.

54

73. (New) A computer-readable medium as claimed in claim 62 wherein the computer program can further be executed to tag at least one of the package identification data, object identification data, and event data.

74. (New) A computer-readable medium as claimed in claim 62 wherein the computer program can be executed by tagging at least one of the package identification data and object identification data.

75. (New) A computer-readable medium as claimed in claim 62 wherein the computer program can be executed by the computer to receive the object identification data from a sender's computer system.

76. (New) A computer-readable medium as claimed in claim 62 wherein the computer program can be executed by the computer to generate the package identification data associated with the package containing the product.

77. (New) A computer-readable medium as claimed in claim 62 wherein the computer program can be executed by the computer to generate the event data associated with the product in response to receiving data from a scanner of a portal through which the package and contained product passes.

55

78. (New) A computer-readable medium storing package identification data identifying at least one package in association with object identification data identifying one or more objects associated with at least one product contained by the package.

79. (New) A computer-readable medium as claimed in claim 78 wherein the object is the product.

80. (New) A computer-readable medium as claimed in claim 78 wherein the object is the package.

81. (New) A computer-readable medium as claimed in claim 78 wherein the object is a group of packages.

82. (New) A computer-readable medium as claimed in claim 78 wherein the object is a parent comprising at least one child object with respective object identification data.

83. (New) A computer-readable medium as claimed in claim 78 wherein the computer-readable medium further stores event data indicating an event related to the package, in association with the package identification data.

84. (New) A computer-readable medium as claimed in claim 83 wherein the event data comprises description data describing the event associated with the event data.

85. (New) A computer-readable medium as claimed in claim 84 wherein the description data identifying the event comprises characters indicating at least one of "package pick up," "package received at pickup distribution hub," "package exited pickup distribution hub," "package on long-haul transport," "package off long-haul transport," "package arrived at receive distribution hub," "package exited receive distribution hub," and "package delivered."

86. (New) A computer-readable medium as claimed in claim 83 wherein the event data comprises location data indicating a location at which the event occurred.

87. (New) A computer-readable medium as claimed in claim 86 wherein the location data identifies at least one of a drop location, carrier store, service center, pickup vehicle, sender's location, package intake of send distribution hub, package outlet of send distribution hub, package inlet to long-haul transport, package outlet to long-haul transport, package intake of receive distribution hub, package outlet of receive distribution hub, and receiver's location.

88. (New) A computer-readable medium as claimed in claim 78 wherein the event data comprises data indicating the date and time on which the event occurred.

89. (New) A computer-readable medium as claimed in claim 78 wherein the computer-readable medium further stores at least one tag associated with respective package identification data, object identification data, and event data.

57

90. (New) A computer-readable medium as claimed in claim 78 wherein the computer-readable medium stores at least one tag in association with the package identification data and object identification data.

91. (New) A computer-readable medium as claimed in claim 78 wherein the computer program can be executed by the computer to receive the object identification data from a sender's computer system.

92. (New) A computer-readable medium storing a computer program that can be executed by a computer to: receive object identification data identifying at least one object associated with one or more products; obtain package identification data identifying a package containing the product; link the object identification data to the package identification data; generate a shipping label including the package identification data; provide the shipping label to a sender of a package containing the product; receive event data generated at one or more portals as the package is transported from sender to receiver via a carrier; and store event data in correspondence with the linked object identification data and package identification data.

93. (New) A computer-readable medium as claimed in claim 92 wherein the object is the product.

94. (New) A computer-readable medium as claimed in claim 92 wherein the object is the package.

95. (New) A computer-readable medium as claimed in claim 92 wherein the object is a group of packages.

96. (New) A computer-readable medium as claimed in claim 92 wherein the object is a parent comprising at least one child object with respective object identification data.

97. (New) A computer-readable medium as claimed in claim 92 wherein the computer program can be executed by the computer to receive the object identification data from the computer system of a sender of the package.

98. (New) A computer-readable medium as claimed in claim 92 wherein the computer program can be executed by the computer to receive object identification data generated by a scanner of the portal.

99. (New) A computer-readable medium as claimed in claim 92 wherein the package identification data is obtained by receiving the package identification data from the computer system of a sender of the package.

100. (New) A computer-readable medium as claimed in claim 92 wherein the computer program is executed by the computer to generate the package identification data in a shipping label provided from a computer system to the sender of the package.

101. (New) A computer-readable medium as claimed in claim 92 wherein the computer program is executed by the computer to tag at least one of the object identification data, package identification data, and event data.

102. (New) A computer-readable medium as claimed in claim 92 wherein the computer program is executed to transmit object identification data, package identification data, and event data to an object naming service (ONS) computer system.

60

103. (New) A computer-readable medium as claimed in claim 92 wherein the computer program is executed to transmit object identification data to an object naming service (ONS) computer system, receive a network address corresponding to the object identification data from the ONS computer system, and transmit the object identification data, package identification data, and event data to a physical mark-up language (PML) computer system using the received network address.

104. (New) A computer-readable medium storing a computer program that can be executed by a computer to: receive object identification data identifying at least one object associated with one or more products from a requesting computer system; retrieve a network address for a physical mark-up language (PML) computer system storing event data indicating at least one event related to a package containing at least one product as it progresses in a carrier network from a sender to a receiver, based on the object identification; and transmit the network address to the requesting computer system.

105. (New) A computer-readable medium storing a computer program that can be executed by a computer of an object naming service (ONS) computer system to receive object identification data, package identification data, and event data; retrieve a network address for a physical mark-up language (PML) computer system using object identification data; and transmit object identification data, package identification data, and event data to the PML computer system using the network address.

106. (New) A computer-readable medium storing a computer program that can be executed by a computer to receive object identification data, package identification data, and event data and corresponding tags, and store the object identification data, package identification data, and event data in a data storage unit connected to the computer in association with the tags.

107. (New) A computer-readable medium storing a computer program that can be executed by a computer to: receive a request from a computer system to access data with object identification data and tags, the object identification data associated with at least one object related to one or more products; retrieve data from a data storage unit based on the object identification data and tags; and transmit the retrieved data to the computer system generating the request.

108. (New) A computer-readable medium as claimed in claim 107 wherein the object is the product.

109. (New) A computer-readable medium as claimed in claim 107 wherein the object is a package containing the products.

110. (New) A computer-readable medium as claimed in claim 107 wherein the object is a group of packages containing the products.

111. (New) A computer-readable medium as claimed in claim 107 wherein the object is a parent comprising at least one child object with respective object identification data.

63